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LINGAME, A.H.		
UCHER, D.W.		
IS, J.G.		
RED, J.E.	X	
RERA, D.W.		
RIS, L.R.		
NCIS, G.E.		
DWIN, R.		
LY, T.J.		
SH, J.M.	X	
BY, W.A.		
KEBO, J.A.		
ESTIC, J.R.		
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LEN, J.B.		
RRENS, B.E.		
NTROSS, R.W.		
RGAN, R.V.	X	
RTH, P.		
NELL, R.F.		
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DADES, J.L.	X	
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NNON, W.M.		
ANSON, E.R.		
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BNER, B.P.		
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KINSON, R.B.		
JNG, E.R.		
E, J.O.		
ENDT, M	X	
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-46469 (Rev 10/90)

November 14, 1990

90-RF-6640

Robert M. Nelson, Jr.
Manager
DOE, RFO

Attn: Tom Olsen

STATUS UPDATE ON THE SOLAR EVAPORATION POND RADIOCHEMICAL IMPACTS TO THE NORTH WALNUT CREEK DRAINAGE

This letter serves as a status update on the corrective actions proposed in the June 8, 1990 report, Solar Evaporation Pond Radiochemical Impacts on the North Walnut Creek Drainage, Necessary Corrective Measures. The report, prepared by EG&G's Environmental Monitoring and Assessment Division (EMAD) of the Environmental Restoration (ER) Department, presented the evaluation of the impact of radiochemical contamination of groundwater and surface water in the Solar Evaporation Pond (SEP) area and presented a course of action necessary to further characterize and potentially resolve environmental impacts. A summary of the progress made to date and additional characterization data are presented herein.

Additional Surface Water Stations

The establishment of surface water stations on North Walnut Creek, upstream of the 771 parking lot, was proposed to detect potential upgradient contaminant input to the drainage. To meet this objective, five new surface water stations (Figure 1, SW-116, SW-117, SW-118, SW-128, and SW-999) have been incorporated into the surface water sampling program and are identified on the attached map. Periodic (monthly) sampling at stations SW-116, SW-117, SW-118, and SW-128 was initiated in October. Results from this effort have not been received from the analytical laboratory. Station SW-999, situated just north of the 771 parking lot, is equipped with an event-actuated autosampler and will be used to characterize the surface runoff to the drainage from this area.

In addition to the supplementary surface water stations discussed above, SW-093 was also equipped with a event-actuated autosampler. Station SW-093, located upstream of the SEP drainage area (Figure 2), has been part of the periodic sampling program since 1987, and is considered to be unaffected by drainage from the SEP area. The addition of the autosampler at SW-093 serves two purposes: 1) to characterize potential contaminant input to the drainage via surface runoff from the immediate area, and 2) to assess the downstream effects of contaminant input from the northern Perimeter Security Zone (PSZ), in conjunction with SW-999.

REVIEWED FOR CLASSIFICATION/UCNI/OUO U/NU/NOUO
By G. A. Nesheim/EMCBC Class'n Office
Date 07-03-08
OK for public release.

ADMIN RECORD

I101-A-00002

A single storm event sample was collected from SW-999 on July 23, 1990 and analyzed for gross alpha/gross beta. A corresponding sample was collected from SW-093. These samples were unfiltered, thus radionuclides in the suspended solid material are also a contributing factor to the measured sample activities. A tabulation of the gross alpha and gross beta results for these two stations is presented in Table 1. As indicated by SW-999 results, a source of radiochemical contamination exists from the surface runoff in this area. More definitive conclusions will be drawn once data from stations SW-116, SW-117, SW-118, and SW-128 are received, and additional runoff samples are collected from both stations SW-999 and SW-093.

TABLE 1

GROSS ALPHA/BETA RESULTS IN pCi/L
JULY 23, 1990 STORM-EVENT SAMPLES FROM SW-093 AND SW-999

Station	Gross Alpha	Gross Beta
SW-093	44.89 +/- 13.16	44.03 +/- 5.16
SW-999	111.40 +/- 30.28	120.40 +/- 11.90

Sampling of Seeps and Surface Water Outside the French Drain Catchment Area

Monthly sampling of seeps and surface water stations outside of the French drain catchment area was proposed in the June 8 report to determine other potential surface water contaminant sources from within the PSZ. Two additional surface water stations (Figure 1, SW-120 and SW-124) were established to accomplish this task. Station SW-120 is located at the southern opening of the PSZ drainage culvert and allows for detection of contaminants bypassing the French drain system. Station SW-124 is situated to collect samples of footing drains located north of Building 771. The initial round of sampling at these stations was conducted in October of 1990. Analytical results have not been received.

Repair of Breach Areas of the SEP Surface Drain

Breach areas (identified in Figure 2) in the SEP surface drain may allow overland flow to reach the North Walnut Creek drainage. Surface water bypassing the surface French drain and entering the drainage the PSZ drainage conduit may be a source of elevated radionuclide contamination. Design work for the repairs to the breach areas is underway. The repairs will include removing the mud and soil caking the surface drain and repairing the erosional cut. Additionally, EMAD is currently investigating the re-activation of the Trench 1 and 2 sumps to prevent further overflow and intercept seepage near SW-084 and SW-085.

Treatability Study

The June 8 report proposed that a treatability study of SEP surface seeps be conducted as part of the 903 Pad, Mound, and East Trenches Interim Remedial Action (IRA). This study will not be incorporated into the referenced IRA, but will be included as part of the Site-Wide Treatability Study. The Site-Wide Treatability Study Plan should be finalized in February 1991, per the Inter-Agency Agreement schedule.

Assess French Drain Construction and Design Using Ground Penetrating Radar

The assessment of French drain construction and design integrity using Ground Penetrating Radar (GPR) has not been conducted to date. Other measures to confirm the structure and integrity of the French drain system are being investigated.

Based on the above, a final evaluation of environmental impacts to the North Walnut Creek drainage and effectiveness of the corrective actions proposed in the June 8 report cannot be made at this time. EG&G Rocky Flats will continue to update DOE on the progress of these activities and the additional characterization data collected in support of this assessment.

If you have any question regarding this continued investigation, please contact Sally Martin Lewis at X7756.

J. M. Kersh, Associate General Manager
Environmental Restoration & Waste Management
EG&G Rocky Flats

SML:la

Orig. and 1 cc - R. M. Nelson, Jr.

Attachments:
1. New Surface Water Stations on North Walnut Creek and North of Building 771
2. Solar Evaporation Ponds Drain Configuration and Surface Water Sampling Stations

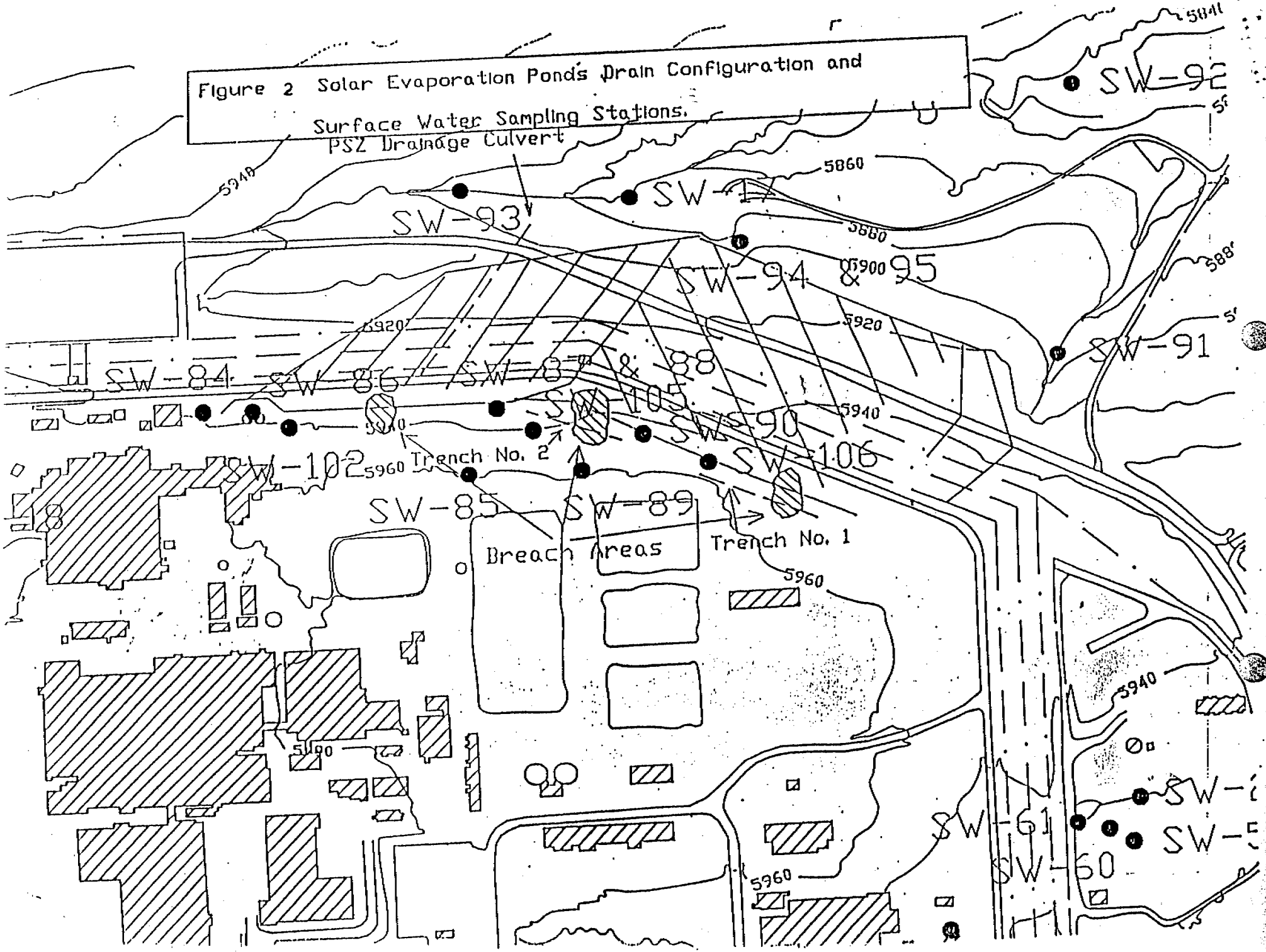
Figure 2 Solar Evaporation Ponds Drain Configuration and Surface Water Sampling Stations.
PSZ Drainage Culvert
SW-92
SW-93
SW-1
SW-94
& 95
SW-91
SW-84
SW-86
SW-87 & 88
SW-105
SW-90
SW-106
SW-102
Trench No. 2
SW-85
SW-89
Trench No. 1
Breach Areas
SW-61
SW-60
5960
5940
5920
5900
5880
5860
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